GOOLY CONSULTANCY SERVICES
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Corporate off : No. 230, Opp. G.R. Lavender Apartments, Sai Enclave Layout, Kothanur Dinne, J.P. Nagar 8th Phase, Bangalore - 560 076.
Contact: +91-80-42277023/24, 9535200024, Email : info@gcsfirm.com, goolyconsultancyservices@yahoo.com, www.gcslabindia.com

TEST REPORT ON PHYSICAL PROPERTIES OF CEMENT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)

Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Receipt: 10.09.2020
Location: ISRO Layout 11th Main Road
Sampling : Sample Received from the site and Tested
Sample Identification*: Priya OPC 53 grade
Reference to BIS codes: **Test Method:**

IS 4031(Part 1):1996(RA 2016) Determination Of Fineness By Dry Sieving
IS 4031(Part 3):1988 (RA 2019) Determination Of Soundness
IS 4031 (Part 4):1988 (RA 2019) Determination Of Consistency Of Standard Cement Paste
IS 4031 (Part 5):1988 (RA 2019) Determination Of Initial & Final Setting Time
IS 4031 (Part 6):1988 (RA 2019) Determination Of Compressive Strength
IS 4031 (Part 11):1988 (RA 2019) Determination Of Density

AE-1
A.E.E

Specification :
IS 269 : 2015 Ordinary Portland Cement

Condition of sample: Satisfactory
Date of test: 11.09.2020 to 09.10.2020

Sl.No	Physical properties	Results	Units	Requirement as per IS 269: 2015		
				33 Grade	43 Grade	53 Grade
1	Standard Consistency	29.5	%	Not specified	Not specified	Not specified
2	Initial Setting time	165	minutes	Min 30 minutes	Min 30 minutes	Min 30 minutes
3	Final Setting time	360	minutes	Max 600 minutes	Max 600 minutes	Max 600 minutes
4	Fineness by dry sieving	9.2	%	–	–	–
6	Soundness (Le Chatelier's Method)	1	mm	Max 10 mm	Max 10 mm	Max 10 mm
8	Density	3.15	g/cm^3	–	–	–

AE-02

Gooly Consultancy Services Bangalore

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Sl.No	Physical properties	Results	Units	Requirement as per IS 269: 2015		
				33 Grade	43 Grade	53 Grade
9	Compressive Strength					
	3 Days	28.0	N/mm^2	Min 16 N/mm^2	Min 23 N/mm^2	Min 27 N/mm^2
	7 Days	38.5	N/mm^2	Min 22 N/mm^2	Min 33 N/mm^2	Min 37 N/mm^2
	28 Days	54.0	N/mm^2	Min 33 N/mm^2, Max 48 N/mm^2	Min 43 N/mm^2, Max 58 N/mm^2	Min 53 N/mm^2

AE I

A.E.E

Remarks:

The tested sample is found to be Satisfactory as it meets the requirements of IS 269 : 2015 specification/Project Requirement

1. The test results pertain to the number of sample Received and Tested
2. Any correction in the report will make this report invalid
3. This report without prior written approval should not be reproduced or published in full or part.
4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By: Pushpa D B

Tested By: Sree Charan S

AE-02

Gooly Consulting Services Bangalore

Project Manager

TEST REPORT ON MECHANICAL PROPERTIES OF COARSE AGGREGATES

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 01

Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)

Name Contractor: M/s Sathya Constructions

Name of PMC: M/s Gooly Consultancy services, Bangalore

Date of Receipt: 10.09.2020

Sample Identification*: 20mm down size Coarse Aggregate

Location: ISRO Layout 11th Main Road

Sampling : Sample Received from the site and Tested

Reference to BIS codes: **Test Method:**

IS 2386 (Part 1) : 1963 (RA 2016) Particle Size And Shape Cl 2

IS 2386 (Part 3) : 1963 (RA 2016) Specific gravity, density, voids, absorption and bulking

IS 2386 (Part 4) : 1963 (RA 2016) Mechanical Properties

AE-1

A.E.E

Specification

IS 383 : 2016 Coarse And Fine Aggregate For Concrete

Condition of sample: Satisfactory

Date of test: 10.09.2020 to 17.09.2020

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM COARSE AGGREGATE:

Total weight taken: 5000 grams

Sl.No	Sieve Designation	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Requirement as per IS 383: 2016 Table-7 (Cl 6.1 & 6.2)	
						Graded	Single-Sized
1	40 mm	0	0	0	100	100	100
2	20 mm	555	555	11.1	88.9	90-100	85-100
3	10 mm	4425	4980	99.6	0.4	25-55	0-20
4	4.75 mm	15	4995	99.9	0.1	0-10	0-5
5	Pan	5	5000	100	0	---	---

AE-02

Gooly Consultancy Services Bangalore

GOOLY CONSULTANCY SERVICES
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MECHANICAL PROPERTIES

Sl.No	Tests	Result	Requirements as per IS 383 : 2016
1	Flakiness Index (%)	6.5	Combined flakiness & elongation index shall not exceed 40 % for uncrushed or crushed aggregate
2	Elongation Index (%)	6.6	
3	Specific Gravity	2.64	–
4	Water Absorption (%)	0.50	–
5	Aggregate crushing strength (%)	23	For Aggregates to be used in concrete for wearing surfaces, (such as runways, roads, pavements, tunnel lining carrying water, spillways and stilling basins): Max 30 %
6	Aggregate Impact Value (%)	25	For Aggregates to be used in concrete for wearing surfaces, (such as runways, roads, pavements, tunnel lining carrying water, spillways and stilling basins): Max 30 % For Aggregates to be used in concrete other than for wearing surfaces: Max 45 %

AE-1

A.E.E

Remarks:

The tested sample is found to be Satisfactory as it meets the requirements of IS 383 : 2016 specification/Project Requirement.

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2. Any correction in the report will make this report invalidate
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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By: Pushpa D B

Tested By: Sree Charan S

Gooly Consultancy Services Bangalore

Project Manager

AE-02

GOOLY CONSULTANCY SERVICES
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Sample ID No: 00613-7/3

PHYSICAL PROPERTIES

Sl.No	Tests	Result	Requirements as per IS 383 : 2016 Table-3, (Cl-5.7)
1	Specific Gravity	2.43	2.1 to 3.2
2	Material Finer than 75μ (%)	9.6	–
3	Fineness Modulus	2.75	–
4	Water Absorption (%)	1.52	5% Max

AE-1

Remarks:

The tested sample is found to be Satisfactory as it meets the requirements of IS 383 : 2016 specification/Project Requirement.

A.E.E

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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By:
Pushpa D B

Tested By:
Sree Charan S

Gooly Consultancy Services Bangalore

Project Manager

AE-02

GOOLY CONSULTANCY SERVICES

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Sl.No	Sample Identification mark on CC Cubes	Location	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of cube (kg)	Failure Load (kN)	Compressive strength (N/mm^2)	Average Compressive strength of 3 Cubes (N/mm^2)	Remarks
7	1/1	ISRO Layout 11th Main Road	M-20	14-Oct-20	11-Nov-20	150*150*150	22500	8.322	462	20.54	20.6	Satisfy the IS 456:2000 Specification
	1/2	ISRO Layout 11th Main Road	M-20	14-Oct-20	11-Nov-20	150*150*150	22500	8.233	475	21.12		
	1/3	ISRO Layout 11th Main Road	M-20	14-Oct-20	11-Nov-20	150*150*150	22500	8.201	455	20.23		
8	1/1	SFS 208 Cross road-1	M-20	15-Oct-20	12-Nov-20	150*150*150	22500	8.233	466	20.72	20.6	
	1/2	SFS 208 Cross road-1	M-20	15-Oct-20	12-Nov-20	150*150*150	22500	8.162	475	21.12		
	1/3	SFS 208 Cross road-1	M-20	15-Oct-20	12-Nov-20	150*150*150	22500	8.230	452	20.09		

A&I

A.E.E

Remarks: The tested sample is found to be Satisfactory as it meets the requirements of IS 456 : 2000 (RA 2016) specification/Project Requirement

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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By:
Pushpa D B

Tested By:
Ashwini

Project Manager

Gooly Consultancy Services Bangalore

RE-02

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DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of sample 04-Nov-20
Chainage/Location/ Landmark: ISAQ Layout 1st Main Road
Date of Testing: 05-Nov-20
Reference to IS Code: IS 2386 (Part 1):1963(RA 2016)
Layer: WMM

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50	3155	24.58	177	5.61	137.91	64.40	3155	87	2.76	85.39
31.5	25	16.95	2645	20.61	132	4.99	102.85	--	--	--	--	
25	20	13.50	2153	16.78	235	10.92	183.11	40.50	2153	169	7.85	165.87
20	16	10.80	1785	13.91	356	19.94	277.39	32.40	1785	187	10.48	183.53
16	12.5	8.55	1266	9.86	185	14.61	144.15	25.60	1266	277	21.88	271.86
12.5	10	6.75	965	7.52	136	14.09	105.97	20.20	965	269	27.88	264.01
10	6.3	4.89	865	6.74	88	10.17	68.57	14.70	865	175	20.23	171.75
AE-1		TOTAL:	12834	100	1309	80.34	1019.95	TOTAL:	10189	1164.00	91.07	1142.41

A.E.E

Flakiness Index: 10.20 %
Elongation Index: 11.42 %
Combined Flakiness & Elongation Index: 22 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By: Pushpa D B

AE-02

Tested By: Sree Charan S

Project Manager

Gooly Consultancy Services Bangalore

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TEST REPORT OF GRADATION FOR WET MIX MACADAM

Name of Client:	Bruhat Bangalore Mahanagara Palike
Address:	Yelahanka Division
Package No:	Package - 01
Name of Work:	Improvements to roads, drains and other developmental works in ward no-02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name of Contractor:	M/s Sathya Constructions
Name of PMC:	M/s Gooly Consultancy services, Bangalore
Date of Sample Collection:	10-Nov-20
Chainage/Location/ Mark:	Balaji Layout 1st Main Road
Date of testing:	10-Nov-20
BIS Code:	IS 2386 (Part 1):1963 (RA 2016) Particle Size and Shape Cl 2
Layer:	WMM

Oven Dry Wt (gm): 10000

Sl No	Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits Vide Table 400.13 as Per MORTH Specification
1	53	0	0	0.00	100	100
2	45	365	365	3.65	96.35	95-100
3	22.4	2785	3150	31.50	68.50	60-80
4	11.2	2986	6136	61.36	38.64	40-60
5	4.75	2023	8159	81.59	18.41	25-40
6	2.36	1023	9182	91.82	8.18	15-30
7	0.600	785	9967	99.67	0.33	8-22
8	0.075	33	10000	100.00	0.00	0-5

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Contractor Representative

Client(AE/AEE/EE)

PMC

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TEST REPORT OF DETERMINATION OF RATE OF SPREAD OF PRIMER COAT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no-02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Chainage/Location /Land Mark: Balaji Layout 1st Main Road
Date of testing: 28-Nov-20

AE-1
A.E.E

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.227	0.228	0.227
Weight of Prime/Tack Coat (d=c-b)	Kg	0.027	0.028	0.027
Rate of spread of Prime/tack coat	kg/Sq.m	0.675	0.700	0.675
Average	**kg/Sq.m**	**0.683**		
Specified Limit	**kg/Sq.m**	**0.60 Kg/sq.m for Prime coat**		

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Contractor Representative AE-2 **Client(AE/AEE/EE)** **PMC**

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TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 25-Nov-20
Chainage/Location /Land Mark: Yelahanka New town 5th Phase 1st Cross Road Ch 0.0 to 230
Date of testing: 25-Nov-20
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477	
3. Weight of Bitumen Extracted, gm	23	
4. Bitumen content in %	4.6	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	38	7.97	7.97	92.03	90 - 100
19	86	18.03	26.00	74.00	71-95
13.2	78	16.35	42.35	57.65	56-80
4.75	88	18.45	60.80	39.20	38-54
2.36	47	9.85	70.65	29.35	28-42
0.3	66	13.84	84.49	15.51	7-21
0.075	42	8.81	93.29	6.71	2-8

AE-1
A.E.E

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Cohtractor Representative **Client(AE/AEE/EE)** **PMC**

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TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 28-Nov-20
Chainage/Location /Land Mark: Balaji Layout 1st Main Road
Date of testing: 28-Nov-20
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	477	
3. Weight of Bitumen Extracted, gm	23	
4. Bitumen content in %	4.6	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 477 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
37.5	0	0.00	0.00	100.00	100
26.5	42	8.81	8.81	91.19	90 - 100
19	84	17.61	26.42	73.58	71-95
13.2	75	15.72	42.14	57.86	56-80
4.75	88	18.45	60.59	39.41	38-54
2.36	47	9.85	70.44	29.56	28-42
0.3	85	17.82	88.26	11.74	7-21
0.075	19	3.98	92.24	7.76	2-8

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Contractor Representative **Client(AE/AEE/EE)** **PMC**

Gooly Consultancy Services Bangalore

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TEST REPORT OF BITUMEN CONTENT & GRADATION FOR DENSE BITUMINOUS MACADAM

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 30-Nov-20
Chainage/Location /Land Mark: SFS 208 3rd Main road Ch: 49-325
Date of testing: 30-Nov-20
Type of Mix: Dense Bituminous Macadam

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for DBM Grade II (50-75mm) Bitumen Content 4.5 min VG-30
2. Weight of Mixture after Test, gm	474	
3. Weight of Bitumen Extracted, gm	26	
4. Bitumen content in %	5.2	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 474 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500-10
A&E-1 A.E.E.	0	0.00	0.00	100.00	100
26.5	41	8.65	8.65	91.35	90 - 100
19	96	20.25	28.90	71.10	71-95
13.2	64	13.50	42.41	57.59	56-80
4.75	85	17.93	60.34	39.66	38-54
2.36	55	11.60	71.94	28.06	28-42
0.3	78	16.46	88.40	11.60	7-21
0.075	21	4.43	92.83	7.17	2-8

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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TEST REPORT FOR DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no-02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Chainage/Location /Land Mark: Yelahanka New town 5th Phase 2nd Main Road Ch:0.0 to 190
Date of testing: 04-Dec-20

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	mt	0.2*0.2	0.2*0.2	0.2*0.2
Area of Plate (a)	Sq.m	0.04	0.04	0.04
Initial Wt of empty Plate (b)	Kg	0.200	0.200	0.200
Final weight of plate after application of prime /Tack Coat (c)	Kg	0.213	0.211	0.211
Weight of Prime/Tack Coat (d=c-b)	Kg	0.013	0.011	0.011
Rate of spread of Prime/tack coat	kg/Sq.m	0.325	0.275	0.275
Average	**kg/Sq.m**	**0.292**		
Specified Limit	**kg/Sq.m**	**2.5 kg per 10 sqm for Tack coat**		

Remarks:
The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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DETERMINATION OF FLAKINESS AND ELONGATION INDEX

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of sample Collection: 27-Nov-20
Chainage/Location/ Landmark: Yelahanka New town 5th Phase 1st Cross Road Ch:0.0 to 230
Date of Testing: 28-Nov-20
Reference to IS Code: IS 2386 (Part 1):1963(RA 2016)
Layer: BC

Size of Aggregates		Flakiness Index						Elongation Index				
Passing through IS sieves	Retained on IS sieves	Thickness gauge size	Weight of aggregate taken in each fraction	Fraction retained in the whole sample	Weight of aggregate in each fraction passing the thickness gauge.	Percent passing the gauge (100*(6/4)	Flakiness Index (7 * 5)	Length gauge size	Weight of aggregate taken in each fraction	Weight of aggregate in each fraction retained on length gauge	Percenet NOT passing the gauge (100*(11/10)	Elongation Index (5 * 12)
(mm)	(mm)	(mm)	(grams)	(Percent)	(grams)			(mm)	(grams)	(grams)		
1	2	3	4	5	6	7	8	9	10	11	12	
63	50	33.90						--				
50	40	27.00						81.00				
40	31.5	21.50						64.40				
31.5	25	16.95						--				
25	20	13.50						40.50				
20	16	10.80						32.40				
16	12.5	8.55						25.60				
12.5	10	6.75	1547	49.39	185	11.96	590.68	20.20	1547	175	11.31	558.75
10	6.3	4.89	1585	50.61	195	12.30	622.61	14.70	1585	188	11.86	600.26
		TOTAL:	3132	100	380	24.26	1213.28	TOTAL:	3132	363.00	23.17	1159.00

AE-I

A.E.E

Flakiness Index: 12.13 %
Elongation Index: 11.59 %
Combined Flakiness & Elongation Index: 24 %

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

1. The test results pertain to the number of sample Received and Tested
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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By: Pushpa D B
AE-02
Tested By: Sree Charan S
Project Manager

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DETERMINATION OF AGGREGATE IMPACT VALUE

Name of Client: Bruhat Bangalore Mahanagara Palike

Address: Yelahanka Division

Package No: Package - 01

Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)

Name Contractor: M/s Sathya Constructions

Name of PMC: M/s Gooly Consultancy services, Bangalore

Date of sample Collection: 30-Nov-20

Chainage/Location/ Landmark: Balaji Layout 1st Main Road

Date of Testing: 30-Nov-20

Reference to BIS codes: IS 2386 (Part IV) - 1963 (RA 2016).

Layer: BC

Particulars of observations	TEST (1)	TEST (2)
Total weight of Surface dry sample (passing 12.5 mm sieve and retaine on 10 mm sieve) = (A)	290	290
Weight of fraction passing 2.36 mm sieve after giving 15 blows = (B)	64	65
Weight of fraction retained 2.36 mm sieve after giving 15 blows = (C)	225	224
Aggregate impact value = (B/A)*100	22.1	22.5

AE

AE,E

Aggregate Impact value (mean of two tests)= 22.3

Nearest to whole number= A 22%

Remarks:

The tested sample is found to be Satisfactory as it meets the requirements of MORTH specification/Project Requirement

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4. Samples will be disposed after 90 days from the date of issue of test certificate.

Prepared By: Pushpa D B

AE-02

Tested By: Sree Charan S

Gooly Consultancy Services Bangalore

Project Manager

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TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 05-Dec-20
Chainage/Location /Land Mark: ISAQ Layout 1st Main Road
Date of testing: 05-Dec-20
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	470	
3. Weight of Binder Extracted, gm	30	
4. Binder content in %	6.0	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 470 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
AE-1 A.E & E	0	0.00	0.00	100.00	100
13.2	36	7.66	7.66	92.34	90 - 100
9.5	44	9.36	17.02	82.98	70-88
4.75	78	16.60	33.62	66.38	53-71
2.36	75	15.96	49.57	50.43	42-58
1.18	54	11.49	61.06	38.94	34-48
0.6	38	8.09	69.15	30.85	26-38
0.3	44	9.36	78.51	21.49	18-28
0.15	48	10.21	88.72	11.28	12-20
0.075	18	3.83	92.55	7.45	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Contractor Representative **Client(AE/AEE/EE)** **PMC**

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TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 06-Dec-20
Chainage/Location /Land Mark: Balaji Layout 1st Main Road
Date of testing: 06-Dec-20
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500.17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	473	
3. Weight of Binder Extracted, gm	27	
4. Binder content in %	5.4	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 473 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
AE-1 A.E.E	0	0.00	0.00	100.00	100
13.2	28	5.92	5.92	94.08	90 - 100
9.5	105	22.20	28.12	71.88	70-88
4.75	58	12.26	40.38	59.62	53-71
2.36	66	13.95	54.33	45.67	42-58
1.18	35	7.40	61.73	38.27	34-48
0.6	41	8.67	70.40	29.60	26-38
0.3	38	8.03	78.44	21.56	18-28
0.15	45	9.51	87.95	12.05	12-20
0.075	20	4.23	92.18	7.82	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division. (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 07-Dec-20
Chainage/Location /Land Mark: SFS 208 3rd Main road Ch 49-325
Date of testing: 07-Dec-20
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500 17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	469	
3. Weight of Binder Extracted, gm	31	
4. Binder content in %	6.2	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 469 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
AE-1 A.E.E	0	0.00	0.00	100.00	100
13.2	23	4.90	4.90	95.10	90 - 100
9.5	102	21.75	26.65	73.35	70-88
4.75	86	18.34	44.99	55.01	53-71
2.36	55	11.73	56.72	43.28	42-58
1.18	39	8.32	65.03	34.97	34-48
0.6	35	7.46	72.49	27.51	26-38
0.3	32	6.82	79.32	20.68	18-28
0.15	28	5.97	85.29	14.71	12-20
0.075	25	5.33	90.62	9.38	4-10

Remarks:

The tested sample is found to be satisfactory as it meets the requirements of the MORTH Specification/Project Requirement.

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Contractor/Contractor Representative AE-2 **Client(AE/AEE/EE)** **PMO**

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TEST REPORTS FOR BITUMEN CONTENT & GRADATION OF BITUMINOUS CONCRETE

Name of Client: Bruhat Bangalore Mahanagara Palike
Address: Yelahanka Division
Package No: Package - 01
Name of Work: Improvements to roads, drains and other developmental works in ward no- 02 & 03 under road development head in Chief Minister Nava Nagarothan grants of Yelahanka division (Package -01)
Name Contractor: M/s Sathya Constructions
Name of PMC: M/s Gooly Consultancy services, Bangalore
Date of Sample Collection: 07-Dec-20
Chainage/Location /Land Mark: SFS 208 3rd Main road Ch: 49-325
Date of testing: 07-Dec-20
Type of Mix: Bituminous Concrete

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Requirements
1. Weight of Mixture before Test, gm	500	As per MORTH Specification for Grade II Vide Table 500 17 Binder Content 5.4% min
2. Weight of Mixture after Test, gm	472	
3. Weight of Binder Extracted, gm	28	
4. Binder content in %	5.6	

GRADATION AFTER EXTRACTION

TOTAL WEIGHT OF SAMPLE: 472 gms

SIEVE SIZE in mm	Weight Retained in gm	% Retained	Cumulative % Retained	% Passing	Requirements as per MORTH Specification Table 500.17
13.2	0	0.00	0.00	100.00	100
9.5	26	5.51	5.51	94.49	90 - 100
4.75	102	21.61	27.12	72.88	70-88
2.36	88	18.64	45.76	54.24	53-71
1.18	52	11.02	56.78	43.22	42-58
0.6	43	9.11	65.89	34.11	34-48
0.3	30	6.36	72.25	27.75	26-38
0.15	45	9.53	81.78	18.22	18-28
0.075	25	5.30	87.08	12.92	12-20
	15	3.18	90.25	9.75	4-10

Remarks:

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